

REMARKS

Claims 1, 2, 4, 7, 10, 11, 13, 16 and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In response to this rejection, Applicant kindly amends claims 1, 4-6, 8-15 and 17-19, by which, Applicant believes that all of the claims should have clearly claimed the subject matter which Applicant regards as his invention.

Claims 1, 2, 8, and 9 are rejected under U.S.C. 102(b) as being anticipated by Lai U.S. Patent No. 5,509,465. Claims 3-5, 7, 12-14 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lai U.S. Patent No. 5,509,465. Claims 6 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lai U.S. Patent No. 5,509,465 in view of Tanahashi et al. U.S. Patent No. 6,189,602. Claims 11, 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lai U.S. Patent No. 5,509,465 in view of Nelson U.S. Patent No. 5,339,214. In response to this, Applicant carefully amended claims 1 and 11. These amendments can find support from the disclosures of the original descriptions and drawings. Thus, no new matter problem is raised. The amended claims 1 and 11, as deemed by Applicant, should be allowable over the prior arts in record. Detailed explanations are given below.

The amended claim 1 discloses a heat sink which has a plurality of fins. Each fin defines a through hole and forms a connecting tab extending around a periphery of the through hole. A slot is defined in the connecting tab and receives an end of the connecting tab of an adjacent one of the fins. That is, the slot is defined in the connecting tab which is around a periphery of the through hole.

However, Lai did not teach such a feature that the slot is defined in the connecting tab which is around a periphery of the through hole. Accordingly, amended claim 1 is different from Lai, and should be allowable. Claims 4-10 each include all limitations of claim 1; thus, claims 4-10 should also be allowable.

For the invention as described in claim 11, a heat pipe is not taught by Lai which is attached to a heat-generating electronic device on one end and to a heat sink on the other end. Additionally, in claim 11 of the present invention, the fins and the duct are accommodated in the frame. The frame is secured to the fan. The duct interferentially receives the free end of the heat pipe therein. In other words, it is the frame rather than the duct which has a relationship with securing of the fan. However, the rod member 6 of the Lai is disposed out of the connecting member 7 for a purpose of clamping a clip, thereby securing the fan to the heat sink. For the cited Lai, it is clear that the rob member 6 is an essential component to securing the fan. Nelson taught nothing about engagement of the fan and the heat sink. Therefore, amended claim 11 is not unpatentable over Lai in view of Nelson, and should be patentable.

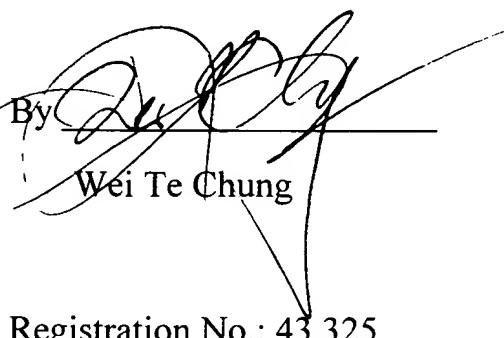
Claims 12-19 are dependent from claim 11; thus, claims 12-19 should also be patentable.

Newly added claim 20, in addition to the limitations of the claim 1, further points out each of the heat sink is made of a single metal plate. That is, the connecting tab is created from the fin which is a single metal plate; and thus, the through hole is defined in the fin. However, each of the fins of Lai is impossible to be made from a single metal plate. Thus, claim 20 should bear more patentable weight.

In view of the foregoing, the subject application as claimed in the pending claims is in a condition for allowance and an action to such effect is earnestly solicited.

Respectfully submitted,

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MARKED-UP COPY OF AMENDMENTS TO THE CLAIMS

1. A heat sink assembly comprising:
 - a frame;
 - a plurality of fins spacedly received in the frame, each [fin] of the fins defining [at least one] a through hole and forming a [plurality of tabs] connecting tab extending around a periphery of [each] the through hole, a slot being defined in the connecting tab of each of the fins and receiving an end of the connecting tab of an adjacent one of the fins; and
 - [at least one] a duct inserted through the through [holes] hole of each of the fins and in thermal contact with the [plurality of] tabs.
4. The heat sink assembly as recited in claim 1, wherein a pair of locating portions extends from each [fin] of the fins for forming intervals between the fins.
5. The heat sink assembly as recited in claim 4, wherein a pair of abutting flanges respectively extends vertically toward each other from free ends of the locating portions of each [fin] of the fins, for abutting an adjacent [fin] one of the fins.
6. The heat sink assembly as recited in claim 1, wherein [each] the duct is made of highly heat-conductive metal.
8. The heat sink assembly as recited in claim 7, wherein at least one [casing] of the casings defines a pair of end tabs for abutting outmost fins.
9. The heat sink assembly as recited in claim 7, wherein [at least one] a latching hole is defined in each [casing] of the casings for interferentially engaging with [an end of] the [corresponding] duct.

10. The heat sink assembly as recited in claim 7, wherein [at least one reinforcing flange] a pair of reinforcing flanges extends inwardly from opposite lateral edges of a horizontal wall of [at least one casing] each of the casings, and at least one screw hole is defined in each [reinforcing flange] of the reinforcing flanges for securing the heat sink assembly to a fan.
11. A heat sink system comprising:
 - a fan;
 - a heat pipe adapted to be attached to a heat-generating electronic device, the heat pipe comprising [at least one] a free end; and
 - a heat sink [secured to the fan, the heat sink] comprising a frame secured to the fan, a plurality of fins and [at least one] a duct, the fins and the duct being accommodated in the frame, each [fin] of the fins defining [at least one] a through hole for insertion of the [corresponding] duct therein, the frame defining [at least one] a latching hole for interferentially engaging with an end of the [corresponding] duct, [each] the duct interferentially receiving the [corresponding] free end of the heat pipe therein[;].
12. The heat sink system as recited in claim 11, wherein a tapered tab and at least one locating tab extend from each [fin] of the fins around a periphery of [each] the through hole, for abutting the [corresponding] duct.
13. The heat sink system as recited in claim 11, wherein a pair of locating portions extends from each [fin] of the fins, for forming intervals between the fins.
14. The heat sink assembly as recited in claim 13, wherein a pair of abutting flanges respectively extends vertically toward each other from free ends of the locating portions of each [fin] of the fins, for abutting an adjacent [fin] one of the fins.

15. The heat sink assembly as recited in claim 11, wherein [each] the duct is made of highly heat-conductive metal.
17. The heat sink assembly as recited in claim 16, wherein at least one [casing] of the casings defines a pair of end tabs for abutting outmost fins.
18. The heat sink assembly as recited in claim 16, wherein [at least one] a latching hole is defined in each [casing] of the casings for interferentially engaging with [an end of] the [corresponding] duct.
19. The heat sink assembly as recited in claim 16, wherein [at least one reinforcing flange] a pair of reinforcing flanges extends inwardly from opposite lateral edges of a horizontal wall of [at least one casing] each of the casings, and at least one screw hole is defined in each [reinforcing flange] of the reinforcing flanges for securing the heat sink [assembly] system to [a] the fan.